REMARKS/DISCUSSION OF ISSUES

The Examiner's acceptance of the drawings, acknowledgement of receipt of the claim for priority and receipt of the certified copies, and withdrawal of the objection to claim 5 are acknowledged with appreciation.

Claims 1-8 are pending in the application. Claims 1-8 are rejected.

Claims 1-3 and 6-8 are rejected under 35 USC 103(a) as being unpatentable over Wang (U.S. patent 5,044,001) in view of Smither et al. (U.S. patent 4,953,191) (herein 'Smither').

Wang shows an x-ray microscope, but does not show an x-ray source comprised of a fluid jet and a focused radiation beam of charged particles.

Smither shows an x-ray source comprised of a stream of liquid gallium and a stream of electrons.

In response to Applicant's previous arguments that Smither's stream of liquid gallium is not a jet, the Examiner has responded that Smither's stream is a jet because it meets the McGraw Hill Dictionary definition of 'a strong, well-defined stream of liquid, issuing from an orifice or nozzle or moving in a contracted duct', citing col. 4, lines 26-30 of the reference.

To find the meaning of terms used in a patent application, the first source is the specification itself. On page 1, lines 6-9 of Applicant's specification, it is stated:

A device for generating soft X-rays is known from the published patent application WO 97/40650 (PCT/SE 97/00697). The means for producing a fluid jet in the known device are formed by a nozzle wherefrom a fluid such as water is ejected under a high pressure.

WO 97/40650 describes the formation of a jet on page 6, lines 24-34, as follows:

For the forming of microscopic and spatially stable jets of liquid in vacuum, use is here made of a spatially continuous jet 17 of liquid, which forms in a vacuum chamber 8 as is evident from Fig. 2. The liquid 7 is urged under high pressure (usually 5-100 atmospheres) from a pump or pressure vessel 14 through a small nozzle 10, the diameter of which usually is smaller than about 100Hm and typically one or two up to a few tens of micrometers. This results in a stable microscopic jet 17 of liquid of essentially the same diameter as the nozzle 10 and a speed of about 10-100 m/s.

Since the jet is formed by a nozzle having a diameter, and the jet itself has the same diameter as the nozzle, it is clear that the jet has a circular or nearly circular cross-section.

Applicant's specification provides three examples of jets. These are illustrated in cross-section in Figs. 1a, 1b and 1c. In Figs. 1a, 1c, the cross-section of the jet is circular. In Fig. 1c, the cross-section of the jet is elliptical. Thus, Applicant's jet is characterized by having a curvilinear cross-section.

In contrast, Smither's stream is described as being flat. See, e.g., col. 3, line 2. In order to attain this configuration, Smither employs a distribution head (22), not a nozzle, and a stainless steel plate (14) across which the stream (16) flows. See col. 4, lines 8-10.

As can be seen from Fig. 1 of Smither, the distribution head has a rectilinear cross-section, not a curvilinear cross-section, and directs the stream onto the plate. Consequently the stream is flat, not curvilinear.

To make this distinction more clear, claims 1 and 6 are currently amended to call for the jet to have a curvilinear cross-section. Support for these amendments is clearly provided

by Figs. 1a, 1b, 1c and by the related descriptive portions of the specification, e.g., page 4, line 10 through page 5, line 5.

Moreover, Smither does not teach or suggest to focus a radiation beam on the stream. As shown in Fig. 1, and described at col. 4, lines 5 and 6, Smither's beam emanates from a slit in the form of a flat stream of parallel beams (18), oriented transversely to the stream, so as to irradiate a substantial portion of the width of the stream. The parallel beams do not meet or even converge. Thus, the beam is not focused.

Accordingly, Smither fails to teach or suggest an x-ray source comprised of a radiation beam focused on a fluid jet, and thus the combination of Smither and Wang fails to teach or suggest an x-ray microscope incorporating such a source.

The rejection is therefore in error and should be withdrawn.

Claim 4 is rejected under 35 USC 103(a) as being unpatentable over Wang in view of Smither as applied above, and further in view of Berglund et al. (Rev. Sci. Instrum. 69, 2361, 1998)(herein 'Berglund').

Berglund discloses a liquid jet target for an x-ray source. The liquids disclosed include nitrogen, oxygen, neon, argon or xenon. X-rays are formed by focusing a laser beam on the liquid jet.

Thus, Berglund fails to teach or suggest the use of a focused radiation beam of charged particles. Since this limitation is incorporated into claim 4 by dependency, claim 4 is patentable over the combination of Wang, Smither and Berglund, and the rejection should therefore be withdrawn.

Claim 5 is rejected under 35 USC 103(a) as being unpatentable over Wang in view of Smither as applied above, and

further in view of Iketaki et al. (U.S. patent 5,835,262)(herein 'Iketaki').

Iketaki discloses an x-ray microscope (Fig. 7) including a source (21-23), a sample (27) and a condenser lens (24) between the source and the sample.

However, claim 5 calls for the source of charged particles to comprise an electron gun for a cathode ray tube, as well as calling for a condenser lens disposed between the source and the sample.

Iketaki does not disclose a source of charged particles of any kind, but rather discloses a source of laser radiation (21).

Accordingly, it is urged that claim 5 is patentable over the combination of Wang, Smither and Iketaki, and that the rejection should be withdrawn.

Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection of record, allow all the pending claims, and find the application to be in condition for allowance.

Respectfully submitted,

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